

## EPA Puget Sound Financial and Ecosystem Accounting Tracking System (FEATS)

*Photo by Rebecca Pirtle, Editor, Kingston Community News (Doe-Kag-Wats Estuary of the Suquamish Tribe)*

### PROJECT INFORMATION

<b>1. Federal Grant Number</b>	PC-00J899-03	<b>*2a. Reporting Period Start Date:</b>	4/1/2017	<b>*2b. Reporting Period End Date:</b>	9/30/2017
<b>3. Recipient Organization (Name and complete address including zip code)</b> Name: Washington Department of Ecology Address 1: P.O. Box 47600 Address 2: City: Olympia State: WA Zip Code: 98504-7600			<b>4. Project Manager Contact Information</b> Name: Diane Dent Phone: (360) 407-6616 Ext: Fax: (360) 407-6426 Email: diane.dent@ecy.wa.gov		
<b>5a. Program (RFP)</b>  ECO Lead Org RFP	<b>5b. Project Title</b>  Toxics and Nutrients Program Rd. 5&6		<b>*6. Collaborating Organizations/Partners</b> Department of Health (Clean Water BMPs for Agricultural Issues), and numerous other entities for subawards.  <input type="checkbox"/> Subawardee		

<b><u>Submission Instructions:</u></b> EPA fills in the white boxes. Grantee fills in the yellow boxes (boxes with asterisks). Refer to guidance document for how to fill out the boxes.  After completing the form, save and e-mail it to the Project Officer and cc: the Technical Monitor.	<b>Project Officer:</b> Gina Bonifacino <b>U.S. Environmental Protection Agency</b> <b>Email:</b> Bonifacino.Gina@epamail.epa.gov  <b>Technical Monitor:</b> Gina Bonifacino <b>U.S. Environmental Protection Agency</b> <b>Email:</b> Bonifacino.Gina@epamail.epa.gov	<b>*7a. Name/Title of Person Submitting Report</b>	Diane Dent
		<b>*7b. Date Report Submitted</b>	11/22/2017

## FUNDING/COST ANALYSIS

8a. Total EPA Assistance Amount Awarded:	\$5,395,000.00	8b. Funding Year (Federal Fiscal Year Funds Appropriated)	FY 2014 ----- -----	*9. Total EPA Amount Expended To-Date:	\$1,344,150.00	*10. Funds Drawn Down from EPA To-Date:	\$2,722,442.00
11. Match Amount Required	\$5,395,000.00	*12. Total Match Amount Expended and Documented To-Date:	\$5,240,000.00	*13. Have you experienced any cost overruns or high unit costs?	no		
*14. What issues or questions do you need the EPA Project Officer or Technical Monitor to respond to?		Match expenditures reflect large periodic construction expenditures.					

## BUDGET UPDATE

	15a. APPROVED BUDGET			*15b. SPENT TO-DATE		
	EPA	MATCH	TOTAL	EPA	MATCH	TOTAL
Personnel	\$743,676.00		\$743,676.00	\$334,981.00	\$0.00	\$334,981.00
Fringe Benefits	\$248,649.00		\$248,649.00	\$121,231.00	\$0.00	\$121,231.00
Travel	\$16,029.00		\$16,029.00	\$5,782.00	\$0.00	\$5,782.00
Equipment	\$0.00		\$ 0.00	\$0.00	\$0.00	\$ 0.00
Supplies	\$85,236.00		\$85,236.00	\$20,506.00	\$0.00	\$20,506.00
Contracts	\$0.00		\$ 0.00	\$0.00	\$0.00	\$ 0.00
Other	\$9,380,745.00	\$4,990,000.00	\$14,370,745.00	\$2,957,114.00	\$5,240,000.00	\$8,197,114.00
TOTAL DIRECT CHARGES	\$10,474,335.00	\$0.00	\$10,474,335.00	\$3,439,614.00	\$0.00	\$3,439,614.00
Indirect Charges	\$315,665.00		\$315,665.00	\$120,928.00	\$0.00	\$120,928.00
TOTAL	\$10,790,000.00	\$0.00	\$10,790,000.00	\$3,560,542.00	\$5,240,000.00	\$8,800,542.00
*Explain Any Discrepancies:	This budget display reflects the total budget for rounds 5 and 6.					

## ECOSYSTEM GOALS ADDRESSED

16a. Primary Goal	Water Quality				
16b. Additional Goals	Healthy Habitat	Healthy Species	Human Health	-----	-----

## DIRECT THREATS ADDRESSED

17a. Primary Threat	Surface Water Loading/Runoff from the Built Env				
17b. Secondary Threat(s)	Point Source Pollution	Onsite Sewage Systems	Agriculture/Livestock		

## LINKAGES TO PUGET SOUND ACTION AGENDA

18a. Strategic Priorities Employed	Priority C	-----	-----	-----	-----
18b. Near-Term Actions Supported	NTAs: C1.1.1, C.2.4.1, C1.4.3, C1.6.1; C1.4.1, C2.4.2, C1.2.3, C2.2.3, C9.4.1, C1.6.3, C7.5.4, C7.5.3				
18c. Other Actions Supported	C2.4, C1.1, C1.2, C6.4, C9.4, C7.1, C5.1				

## LINKAGES TO EPA PUGET SOUND MEASURES

19. Measure(s)	Contaminated Sediments	Habitat Restored/Protected	Shellfish Beds
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## LINKAGES TO PUGET SOUND DASHBOARD INDICATORS

20a. Primary Indicator	Toxics in Sediments				
20b. Additional Indicators	Toxics in Fish	Marine Water Quality Index	Freshwater Quality Index	-----	-----

## PROJECT LOCATION

21a. Latitude		21b. Longitude	
21c. Hydrologic Unit Code	171100 - Sound-wide	171100 - Sound-wide	-----
21d. Action Area	Sound-wide	-----	-----

## MEASURES OF SUCCESS (Key Grant Outputs)

*22a. Description (e.g., "shellfish beds reopened")	*22b. Unit (e.g., "acres")	*22c. Project Target ("number")	*22d. Project Measure To-Date ("number")
Regional Near-term Actions (NTAs) supported	NTAs	10	13
Local Near-term Actions (NTAs) supported	NTAs	5	5
PAH Chemical Action Plan: Woodstoves removed	uncertified woodstoves	172	283
Puget Sound modeling projects completed (Climate change and D.O.) to inform management decisions	Model updates	2	2
Nonpoint inspections, followup meetings, complaints responded to, or referrals	non-point inspections	200	10
Nonpoint sources corrected	sources corrected	20	0
NEP synthesis and story-telling projects completed	Synthesis	5	1
EcoPro green landscaper tests passed resulting in certification	Professional certifications	40	87

## PROJECT MILESTONES

**Instructions:** In the tables below, please explain your progress toward meeting agreed outputs for the period, **reasons for slippages**, and any additional information including **reflections, lessons learned, and/or thoughtful analysis**. When appropriate, include analysis and information of **cost overruns or high unit costs**, and changes to work plan or budget not requiring prior approval from EPA. We encourage photo documentation - please attach to the report as a separate document.

<b>23a. Work Plan Component/Task:</b> Component #1: Coordination and Partnership					
<b>23b. Action Agenda Action(s) Addressed:</b> NTAs: C1.1.1, C.2.4.1, C1.4.3, C1.6.1; C1.4.1, C2.4.2, C1.2.3, C2.2.3, C9.4.1, C1.6.3, C7.5.4, C7.5.3 SS: C2.4, C1.1, C1.2, C6.4, C9.4, C7.1, C5.1					
<b>*23c. Estimated Costs:</b> all costs (including admin) reflected under Component #6: All individual Projects <b>Actual Costs to Date:</b> (If required by PO)					
23d. Sub-Task No.	23e. Sub-Task Description	*23f. Date	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks
1.1	L.O. Coordination Team	9/30/2017	CURRENT	members, rules, plan	We are using the same coordination team and rules established under cooperative agreement PC-00J20101 implements the final two years of the workplan established under PC-00J20101. Coordination team consists of managers and senior staff from different areas of Ecology, EPA coordinator, and



					PSP deputy science director/toxics lead.
1.2	Toxics Core Group	9/30/2017	CURRENT	members, rules	Decision-making meetings ongoing
1.3	Subaward management system	9/30/2016	COMPLETED	System description delivered to the EPA	Management Process Flow submitted (and assumed approved) under application for PC-00J89901.
1.4	Strategic Input from Management Conference	9/30/2016	COMPLETED	Summary of input received	Management Process Flow submitted (and assumed approved) under application for PC-00J89901.

**23a. Work Plan Component/Task:** Component #2: Strategic Investments

**23b. Action Agenda Action(s) Addressed:** Same as above

**\*23c. Estimated Costs:** all costs (including admin) reflected under Component #6: All individual Projects

**Actual Costs to Date:**

(If required by PO)

23d. Sub-Task No.	23e. Sub-Task Description	*23f. Date	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks
2.1	Establish Round 5 and 6 priorities	9/30/2016	COMPLETED	Refined logic models and priorities	Participated in Leadership Conference prior to award to help establish workplan that sets priorities for rounds 5 and 6. Round 5 and 6 projects selected and active. One project is complete.
2.2	Develop proposed process and decision-making criteria for each area of investment	9/30/2016	COMPLETED	Process and criteria documentation	Instituted process for Rounds 5 and 6 prior to award.
2.3	Revise budget to reflect any work to be implemented directly by Ecology	9/30/2017	CURRENT	Updated budget to EPA	Budget established for cooperative agreement. Will update as needed.
2.4	Conduct Round 5 and 6 subaward process	9/30/2016	COMPLETED	Awards made and funds obligated	Competitive processes have ran. Awards made to all subawardees for rounds 5 and 6. Puget Sound Clean Cars was last RFP and ran this period.
2.5	Manage active Round 5 and 6 awards	9/30/2017	CURRENT	Progress reports from subawards	All subawards are now or active with the exception of the nutrients synthesis which will begin late 2017 or early 2018.

**23a. Work Plan Component/Task:** Component #3: Adaptive Management

**23b. Action Agenda Action(s) Addressed:** Same as above

**\*23c. Estimated Costs:** all costs (including admin) reflected under Component #6: All individual Projects

**Actual Costs to Date:**

**(If required by PO)**

23d. Sub-Task No.	23e. Sub-Task Description	*23f. Date	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks
3.1	Participate in target development process	9/30/2016	COMPLETED	Recommended targets	We provided feedback for PSP's targets under PC-00J20101.
3.2	Participate in refinement of Dashboard indicators	9/30/2016	COMPLETED	Input to Dashboard design	We provided feedback for PSP's indicators under PC-00J20101.
3.3	Participate in revisions to Action Agenda	9/30/2016	COMPLETED	Proposed revisions submitted to PSP	See comment in 3.5
3.4	Participate in coordinated ecosystem monitoring program	9/30/2017	CURRENT	Monitoring results in appropriate data bases	Projects are being entered into EIM and being migrated to STORET.
3.5	Participate in NEP/Puget Sound Action Agenda transition team process	9/30/2016	COMPLETED	Participate in NEP/Puget Sound Action Agenda transition team process until permanent strategic initiative leads are selected.	9 Ecology staff participated in the SITT Action Agenda process: 2 on the shellfish team, 3 on the habitat team, and 3 on the stormwater team. One staff coordinated the stormwater team. The permanent teams are now established and distinct from this award.

**23a. Work Plan Component/Task:** Component #4: Project Management

**23b. Action Agenda Action(s) Addressed:** Same as above

**\*23c. Estimated Costs:** all costs (including admin) reflected under Component #6: All individual Projects

**Actual Costs to Date:**

**(If required by PO)**

23d. Sub-Task No.	23e. Sub-Task Description	*23f. Date	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks
4.1	Develop six year strategic plan	9/30/2016	COMPLETED	Plan complete	Plan update for rounds 5&6 was included with this cooperative agreement's application.
4.2	Conducting environmental monitoring	9/30/2017	CURRENT	Quality Assurance Management Plans and QAPPs as needed	Using QMP from PC-00J20101. Monitoring results from EIM are being entered into EIM.
4.3	Manage data from monitoring	9/30/2017	CURRENT	Monitoring results in appropriate data bases	Using QMP from PC-00J20101. Monitoring results from EIM are being entered into EIM.
4.4	Report Results	9/30/2017	CURRENT	FEATS reports	Ongoing work through life of project.
4.5	Conduct performance audits	9/30/2017	PLANNED	Audit reports	I believe we'll have at least one internal and one external audit before the program is complete. The round 1-4 cooperative agreement had one performance audit and is managed in the same way.

**23a. Work Plan Component/Task:** Component #5: Matching Activities

**23b. Action Agenda Action(s) Addressed:** Same as above.

**\*23c. Estimated Costs:** \$5,395,000.00

**Actual Costs to Date:** \$5,240,000.00

(If required by PO)

23d. Sub-Task No.	23e. Sub-Task Description	*23f. Date	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks
5.1	Account for \$5,395,000 million in matching activities, which activities, and how much money.	9/30/2017	CURRENT	SRF State Loan 7/2014 to 12/2016. Expands the Chambers Creek Regional wastewater treatment Plant. This plant treats wastewater from 117 square miles in five cities and unincorporated urban areas in Pierce County. L1400020.	\$5,395,000;Pierce County. Expended \$5,240,000.00.

**23a. Work Plan Component/Task:** Component #6: All individual Projects

**23b. Action Agenda Action(s) Addressed:** Same as above.

**\*23c. Estimated Costs:** \$5,240,000

**Actual Costs to Date:** \$39,360.00

(If required by PO)

23d. Sub-Task No.	23e. Sub-Task Description	*23f. Date	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks
6.1	Project Administration Recipient: Ecology Cost: \$200,000	3/31/2017	PLANNED	Administration of NEP toxics and nutrients program until likely late 2017.	Will hopefully not need to tap this admin until July 2017. We'll go thru the rounds 1-4 admin first.
6.2	Local Source Control Recipient: Snohomish County, Port Angeles, Bothell, Puyallup Cost: \$1,060,000	3/31/2017	PLANNED	Goals differ between jurisdictions. Overall goal conduct at least conduct 1,625 small business site visits-- but reported under round 1-4 cooperative agreement so far.	These sub-grants will start being charged to this cooperative agreement when round 1-4 funds run out sometime around July 2017.
6.3	Landscaper Accreditation Project Recipient: WA State Landscaper and Nursery Assoc. (non-profit) Cost: \$160,000	3/31/2017	COMPLETED	Funding will support the initial implementation of the EcoPro landscaping certification program to reduce toxics and nutrients, and increase instream flows. Funding will support the hiring of a director (.25 FTE for 2 yrs.), implementation of the marketing strategy developed in phase one, and to solidify administrative and governance structures (build relationships with education partners and form permanent steering committee).	87 landscape professionals has passed and been certified into the program (project goal is 40). Please see final report.
6.4	Wood Stove Replacement (PAH Chemical Action Plan) Recipient: Puget Sound Clear Air Agency Cost: \$200,000	3/31/2017	COMPLETED	Remove an additional 172 uncertified woodstoves in or around Puget Sound's only Clean Air Act nonattainment area.	Project has been very successful to date. Please disregard the numbers reported in their sub-FEATS as the reporter incorrectly didn't report the cumulative total.
6.5	Puget Sound Clean Cars Recipient: Gradient & SAE Cost: \$150,000	9/30/2017	CURRENT	Engage industry on technology opportunities to reduce drips and leaks, including efforts on engine design efforts to minimize leaks; research on gasket sealing materials, etc.	Three working group meetings held, consistent attendance. One

				Produce report with recommendations and funding needs for future actions.	additional meeting planned for 2017 Work initiated on draft report. Project on track and within budget -- everything in place to be successful.
6.6	Pilot Study of Zinc and Copper Sources in Commercial Land Use Recipient: Ecology Cost: \$430,000	9/30/2017	CURRENT	Prioritized list of zinc and copper sources in commercial land use that can be used to guide development of BMPs and alternatives assessments for the most important sources of zinc and copper.	The project goal is to characterize the sources of copper and zinc in the built environment. Phase 1 of the project will estimate the copper and zinc loading in an urban area. Phase 2 will sample stormwater runoff from some of the sources in the study area and publish a report with the project findings. The lower Woodland Creek watershed in the City of Lacey and Thurston County, including the Ecology headquarters campus, was selected as the study area. The land use in the study area is 36% commercial/industrial, 13% residential, and 33% undeveloped. Of the area currently developed, 66% is commercial/industrial land use. Phase 1 – Status An extensive literature review has

					<p>been performed. Typical sources and release rates of copper and zinc were compiled. The City of Lacey and Thurston County have provided data regarding traffic volumes, building materials, water supply, precipitation, and population. This data has been expanded, updated, and quality assured using market surveys, aerial imagery, and geographic information systems (GIS). The results of Phase 1 will be recorded in a Technical Memo to be completed in June 2017.</p> <p>Phase 1 – Barriers and Successes</p> <ul style="list-style-type: none"> <li>• The results from studies regarding copper and zinc sources can be highly variable. This leads to uncertainty in loading estimates.</li> </ul> <p>□ This variability was accounted for by compiling multiple study results, standardizing release rates, and summarizing the</p>
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					<p>mean and range of loading values.</p> <ul style="list-style-type: none"> <li>Up-to-date information on local copper and zinc sources is difficult to acquire.</li> </ul> <p><input type="checkbox"/> The most recent data was collected from local agencies and then updated using other data sources (e.g. aerial imagery, market surveys).</p> <ul style="list-style-type: none"> <li>Traffic volumes are only measured for primary arterial and collector streets. Traffic volumes are not measured for minor roadways.</li> </ul> <p><input type="checkbox"/> Traffic volume estimation methods were developed for the roadways without traffic data. These methods use the available traffic count data, business and school populations, number of households, national commuter trends, and historical satellite imagery to count vehicles in parking lots.</p> <p>Phase 2 – Status The Quality Assurance Project</p>
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					Plan (QAPP) for the Phase 2 sampling will be completed by July 2017. The Phase 2 sampling will be performed in the fall and winter of 2017
6.7	PCBs Guide Project Recipient: King County Cost: \$140,000	3/31/2017	COMPLETED	Provide guidance to local source control groups on successful source tracing techniques and information on products containing PCBs.	Project completed-final report submitted in the October 2016 FEATS report.
6.8	Toxics Synthesis Recipient: Ecology/TBD Cost: \$140,000	6/30/2017	COMPLETED	Update information on toxic chemicals in Puget Sound based on projects funded by the NEP grant. Information will be used to update toxic reduction efforts on the most important issues and sources related to the control of toxic chemicals in Puget Sound.	A draft of the Toxic Syntheses Report was written during the September 2016 through March 2017 period. Numerous internal reviews and edits occurred during February and March 2017. The document is nearing completion, with external review set to begin in April. In total, 46.6% of the \$10.6 million devoted to toxics was spent to support existing source control programs (the Local Source Control program and PAH reductions through uncertified woodstove replacement and creosote piling removals). Approximately another third (27%) was spent on sample collection efforts intended to fill data gaps and to further

					<p>source control prioritization. Prevention, defined as the promotion of non-toxic chemical solutions, received 11% of the total funding.</p> <p>A final report containing one-page summaries of each project funded as well as a narrative of overall outcomes and lessons learned will be published by Ecology. The publication was completed by June 2017.</p>
6.9	<p>Local TMDLs #1: Lake Symington PIC Program Recipient: Kitsap Public Health Cost:\$208,000</p>	9/30/2017	CURRENT	<p>This project will assess nutrient levels in Lake William Symington and along Big Beef Creek which drains to Hood Canal 2 shellfish growing area in Kitsap County. Water quality data shows elevated levels of phosphorous in the lake, sporadic algae blooms, and reductions of dissolved oxygen (DO) in Big Beef creek which directly impact the Hood Canal 2 shellfish growing area. There is dense residential development around the lake consisting of homes served by aging onsite septic systems (OSS). The RECIPIENT will conduct door-to-door property inspections of approximately 200 properties around Lake Symington and correct all nutrient problems identified.</p>	<p>Project extended to September 2017 due to faulty sampling thru the summer of 2017. Budget reduced to \$78,413. Project is in the process of closeout.</p>
6.10	<p>Local TMDLs #2: Penrose Point PIC Program Recipient: Tacoma-Pierce Local Health Department Cost: \$261,176</p>	9/30/2017	CURRENT	<p>This project will address toxic algae blooms in Bay Lake, the 303(d) listing of Mayo Creek for pH, the 303(d) listing of Carr Inlet for low dissolved oxygen, and potentially help reduce the frequency and magnitude of biotoxin closures for Penrose Point State Park. This will be accomplished by reducing nutrient loading to Bay Lake and Mayo Cove through a sanitary survey of shoreline properties to identify and correct failing septic systems. In addition, agricultural impacts will be identified and addressed through the existing Pierce County Shellfish Partners protocol. Pet waste will be addressed by providing information to property owners during sanitary survey</p>	<p>Project was expiration date was extended to November 30, 2017. Funds were also moved between tasks due to higher costs for Tasks 2 - water quality sampling, and smaller costs fro Task 3 - Sanitary Surveys</p>

				visits and working to install dog waste bag stations where needed.	
6.11	<p>Local TMDLs #3: Snohomish Lakewise Program Recipient: Snohomish Public Works Cost:\$295,678</p>	9/30/2017	CURRENT	<p>The pilot LakeWise Nutrient Reduction project will reduce nutrient pollution at eleven of Snohomish County's most threatened lakes through actions by watershed residents. Target lakes suffer from high or rapidly increasing nutrients which can lead to water quality impacts, including depressed dissolved oxygen and toxic algae blooms. Non-point residential pollution is the primary cause of these problems.</p> <p>The project will restore 3,200 linear feet (1.8 acres) of lake shoreline buffers, educate 400 to 500 landowners on septic care, provide rebates for 150-300 septic inspections or septic tank risers, and provide runoff infiltration technical support and incentives for a minimum 40 landowners. The project will prevent an estimated 2,225 to 3,100 pounds of nitrogen and 240 to 285 pounds of phosphorus pollution from entering the target lakes.</p>	<p>The sub-grantee found that the most success was the high interest in the lake communities due to the grant outreach and workshop activities. 127 site visits resulted in 54 households fully implementing 9 BMPs to reduce phosphorus, with others implementing most of the BMPs with a goal to complete all of them. Landowners are helping to meeting the goals of the sub-grant: reducing nutrients to the aquatic systems. Even though the grant only covered the septic care workshop costs and outreach mailers, it enhanced participation of the site visits and natural lawn care workshop funded by the County. The other major activity was shoreline restoration. When the 27 projects are complete they will help to restore 2,200 linear feet of shoreline.</p>

					This sub-grant project is in the process of closing.
6.12	Local TMDLs #4: Acedemy Road Recipient: Whatcom County Public Works Cost: \$499,760	9/30/2017	COMPLETED	<p>This project will treat stormwater runoff to reduce phosphorus loading to Lake Whatcom. It is a priority capital project in the RECIPIENT's Lake Whatcom Comprehensive Stormwater Plan and a priority sub-basin due to phosphorus loading from residential development. Construction is planned for the summer of 2015 during the Lake Whatcom watershed work window.</p> <p>The project construction site is in a residential lot recently purchased by the City of Bellingham on Northshore Drive. This location receives runoff from approximately 76 acres of residential, landscaped, and forested area. The RECIPIENT and the City wish to jointly implement a stormwater treatment system on the acquired lot to treat runoff, primarily targeting phosphorus removal. The project is expected to remove approximately 84 percent of current phosphorus load entering the lake from this source.</p>	Final report included. Installation was successful.
6.13	Local TMDLs #5: Mussel Nutrient Reduction Pilot: Phase II Recipient: Pacific Shellfish Institute Cost: \$113,929	3/31/2017	COMPLETED	<p>The RECIPIENT will produce measurable reductions in Budd Inlet nutrient levels through mussel cultivation and harvest, engage the community in these direct nutrient reductions, recycle nutrients into "Surf to Turf" mussel compost, provide nutrient source education, and support decision-making for nutrient and dissolved oxygen (DO) management.</p> <p>The RECIPIENT will also quantify feeding and excretion of a local species of blue mussel (<i>Mytilus trossulus</i>) at the cultivation sites to describe biophysical indicators and nutrient dynamics influencing DO. The intensive seasonal monitoring of these indicators will establish the critical connection between nutrient removals and the resulting impact on Budd Inlet DO concentrations. The project supports the long-term restoration goals of the City and Port of Olympia, Thurston County, LOTT Alliance, and the Squaxin Island Tribe.</p>	APII on the ground work complete.
6.14	Extend 3 Ag Inspectors Recipient: Ecology Cost: \$210,000	9/30/2017	CURRENT	<p>1) 75 inspections per year. 2) Complete the implementation of 20 BMP projects per year. (these will need to be updated to meet how PIC programs have formed)</p>	These funds will not be tapped until the rd. 1-4 NEP inspector funds are depleted (rd. 1-4 funds likely to

					be depleted mid-2017).
6.15	Southwest Region Inspector Recipient: Ecology Cost: \$320,000	9/30/2017	CURRENT	1) 40 inspections per year. 2) Complete the implementation of 10 BMP projects over three years. (these will need to be updated to meet how PIC programs have formed)	These funds will not be tapped until the rd. 1-4 NEP inspector funds are depleted (rd. 1-4 funds likely to be depleted mid-2017).
6.16	D.O. modeling refinements Recipient: PNNL/Ecology Cost: \$250,000	9/30/2017	CURRENT	Improved model performance to isolate dissolved oxygen influence from human activities. Improved management of nutrients throughout the Puget Sound ecosystem.	Ecology completed a re-positioning of where the freshwater sources link up to the model grid nodes. In addition, Ecology reviewed an updated loadings for several freshwater discharges into the Puget Sound with new available data; for example at Ballard Locks. PNNL completed the finer resolution grid for South and Central Sound. Ecology and PNNL agreed upon the scope of a new amendment (A12) which will take us through June 30, 2018. The main thrust of A12 is for PNNL to provide access to PNNL's computer system to conduct model runs, and to provide technical assistance to Ecology during calibration of the finer grid version of the SSM.

6.17	D.O. modeling application Recipient: PNNL/Ecology Cost: \$220,000	9/30/2017	CURRENT	Identify where and nutrient controls can have the greatest benefits in terms of marine dissolved oxygen. Budd Inlet DO TMDL implemented to decrease nutrients from local sources in the South Sound.	This is a new project that received B-list funding recently. Ecology commenced development of a QAPP which will encompass the model runs that will be done in support of the Puget Sound Nutrient Reduction Project. A new contract will need to be developed for continued collaboration with PNNL. This contract will need to be in place by June 30, 2018; thus work on this new contract will commence in early 2019.
6.18	Nutrients Synthesis Recipient: Ecology/TBD Cost: \$50,000	9/30/2017	CURRENT	Science synthesis of all nutrients science work completed under toxics and nutrients NEP grant. Leverage recent knowledge to guide effective investments on nutrient controls.	Ecology commenced the compilation of data and nutrient projects funded under NEP grants. Ecology will be developing criteria for project evaluation
6.19	Climate Change Modeling Recipient: PNNL/Ecology Cost: \$250,000	9/30/2017	BEHIND SCHEDULE	Evaluate the impacts of climate change on the estuarine and nearshore environments in the Puget Sound Basin, including water quality impacts such as nutrients. The project will re-evaluate the existing Salish Sea Model calibration with a focus on nearshore areas. The revised model will be used to evaluate potential impacts of climate change by using output from downscaled climate change models to evaluate changes in circulation and water quality.	PNNL completed calibration of the temperature model of the Snohomish River and proceeded to finalize inputs for conducting historic and future scenarios developed using downscaled CESM products. A major model improvement was needed in that the wetting and



					<p>drying feature of existing FVCOM model was set up to function only for salinity and not for temperature. PNNL made suitable adjustments of the temperature and heat flux module in FVCOM to function reasonably well in the intertidal reaches of the Snohomish River. This was followed by completion of the final calibration of the Snohomish River Estuary model for temperature, salinity, and water surface elevation. PNNL finalized inputs for conducting historic and future scenarios developed using downscaled CESM products. The selected historic and future river, meteorology, and ocean forcing inputs were then presented to EPA and USACE and were approved prior to initiation of model runs. In March 2017, historic and future scenario runs were initiated and completed on track with planned deadline of March 30, 2017. Post</p>
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					processing of results is in progress. Similarly, development of high resolution model of Hood Canal region was initiated and is in progress.
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## CHALLENGES AND SOLUTIONS (specific to reporting period)

*24a. Task No., Sub-Task No.	*24b. Challenge	*24c. Solution
9/30/2017	Working through staff transitions.	Projects from Rounds 1-4 are closed out and the final report and deliverables sent to EPA. Currently working with Rounds 5-6 projects. Two will be closing out, one has been extended to November 30, 2017. Others go until 2018.
0/30/2017	Late sub-FEATS reports. Somewhat related to a variety of projects within the agency with tight deadlines and involvement of a number of people (e.g. agency web transformation), along with staff turnover due to moving to other positions and retirements.	Grant coordinator who replaced Blake Nelson still learning management requirements along with managing other equally demanding tasks.

## HIGHLIGHTS/LESSONS LEARNED/REFLECTIONS

<p><b>*25.</b></p> <ul style="list-style-type: none"> <li>• Toxic synthesis report published by Ecology and included in Rounds 1-4 closure packet sent to EPA.</li> <li>• Ecopro Landscaper project ended with 87 certified landscape professional (goal was 40).</li> <li>• Lake Whatcom Academy Road Project Final Report submitted for review.</li> <li>• Puget Sound Clean Cars Stormwater Partnership is on track and within budget - everything in place to be successful.</li> <li>• The extended duration of the Toxics/Nutrients grants has allowed for good science to evolve and for roll-up synthesis projects to be completed.</li> </ul>
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# EPA Puget Sound Financial and Ecosystem Accounting Tracking System (FEATS) v. September 2012 for Lead Organization Subawardees

Photo by Rebecca Pirtle, Editor, Kingston Community News (Doe-Kag-Wats Estuary of the Suquamish Tribe)

## PROJECT INFORMATION

1. Federal Grant Number	PC-00J202-01	*2a. Reporting Period Start Date:	4/1/2017	*2b. Reporting Period End Date:	10/31/2017
3. Subaward Organization (Name and complete address including zip code) Name: Gradco, LLC dba Gradient Address 1: 600 Stewart Street Address 2: Suite 1900 City: Seattle State: WA Zip Code: 98101-			4. Subaward Project Manager Contact Information Name: David Mayfield Phone: (206) 267-2919 Ext: Fax: (206) 267-2921 Email: dmayfield@gradientcorp.com		
5a. EPA Program  LO - Toxics/Nuts		5b. Subaward Project Title and Contract No.  Puget Sound Clean Cars Partnership C1700064		*6. Collaborating Organizations/Partners  Society of Auto Engineers (SAE)	

<b><u>Subawardee Submission Instructions:</u></b>  LO fills in the white boxes. Subawardee fills in the yellow boxes (boxes with asterisks). Refer to guidance document for how to fill out the boxes. After filling out the yellow boxes, save and e-mail it to your LO Project Manager for approval. LO will roll up the information and submit to EPA for approval.	<b>LO Project Manager:</b> Ken Zarker <b>LO:</b> Toxics and Nutrients <b>Phone:</b> 360-407-6724 <b>email:</b> ken.zarker@ecy.wa.gov  <b>LO Program Coordinator:</b> Blake Nelson <b>LO:</b> Toxics and Nutrients <b>Phone:</b> 360-407-7670 <b>email:</b> blake.nelson@ecy.wa.gov  <b>EPA Project Officer:</b> Gina Bonifacino	*7a. Name/Title of Person Submitting Report	Diane Dent submitting on behalf of David Mayfield
		*7b. Date Report Submitted	11/22/17

## FUNDING/COST ANALYSIS

8a. Total Assistance Amount Awarded:	\$149,370.00	8b. Funding Year (Federal Fiscal Year Funds Appropriated)	FY 2015 ----- ----- -----	*9. Amount Spent To-Date:	\$77,017.30	*10. Amount Reimbursed To-Date:	\$69,595.65
11. Match Amount Required	0	*12. Total Match Amount Spent and Documented To-Date:	\$0.00	*13. Have you experienced any cost overruns or high unit costs?	no		
*14. What issues or questions do you need the LO Project Manager to respond to?		none thus far					

## BUDGET UPDATE

	15a. APPROVED BUDGET			*15b. SPENT TO-DATE		
	LO (EPA) Funds	MATCH	TOTAL	LO (EPA) Funds	MATCH	TOTAL
Personnel	LO does not require	LO does not require	\$ 0.00	LO does not require	LO does not require	LO does not require
Fringe Benefits	LO does not require	LO does not require	\$ 0.00	LO does not require	LO does not require	LO does not require
Travel	LO does not require	LO does not require	\$ 0.00	LO does not require	LO does not require	LO does not require
Equipment	LO does not require	LO does not require	\$ 0.00	LO does not require	LO does not require	LO does not require
Supplies	LO does not require	LO does not require	\$ 0.00	LO does not require	LO does not require	LO does not require
Contracts	LO does not require	LO does not require	\$ 0.00	LO does not require	LO does not require	LO does not require
Other	LO does not require	LO does not require	\$ 0.00	LO does not require	LO does not require	LO does not require
TOTAL DIRECT CHARGES	LO does not require	LO does not require	\$ 0.00	LO does not require	LO does not require	LO does not require
Indirect Charges	LO does not require	LO does not require	\$ 0.00	LO does not require	LO does not require	LO does not require
TOTAL	\$149,370	0	\$149,370.00	\$77,017.30	0	\$77,017.30
*Explain Any Discrepancies:						

## ECOSYSTEM GOALS ADDRESSED

16a. Primary Goal	Water Quality
16b. Additional Goals	Healthy Species    Human Health    -----    -----    -----    -----

## DIRECT THREATS ADDRESSED

17a. Primary Threat	Surface Water Loading/Runoff from the Built Env
17b. Secondary Threat(s)	Oil/Hazardous Spills    -----    -----

## LINKAGES TO PUGET SOUND ACTION AGENDA (Version Adopted August 2012)

18a. Primary Strategic Initiative	Urban Stormwater Runoff
18b. Sub-Strategies Employed	C2.4
18c. Near-Term Actions Supported	C2.4.2

## LINKAGES TO EPA PUGET SOUND PERFORMANCE MEASURES

19. Measure(s)	-----
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## LINKAGES TO PUGET SOUND DASHBOARD INDICATORS

20a. Primary Indicator	Toxics in Fish
20b. Secondary Indicators	Marine Water Quality    Freshwater Quality    -----

## PROJECT LOCATION

21a. Latitude	47.613737	21b. Longitude	-122.336881
21c. Hydrologic Unit Code	171100 - Sound-wide	-----	-----
21d. Action Area	Sound-wide	-----	-----

## MEASURES OF SUCCESS (Key Outputs)

*22a. Description (e.g., "shellfish beds reopened")	*22b. Unit (e.g., "acres")	*22c. Project Target ("number")	*22d. Project Measure To-Date ("number")
list of stakeholders	stakeholders list	1	1
communications strategy work plan	communications plan	1	1
quarterly roundtable meetings	webinars	6	3
Conduct a literature review of the current state of industry design efforts related to preventing vehicle leaks	literature review	1	1
Draft Final Report	draft final report	1	
Final Report Presentation	presentation	1	

## PROJECT MILESTONES

**Instructions:** In the tables below, please explain your progress toward meeting agreed outputs for the period, **reasons for slippages**, and any additional information including **reflections, lessons learned, and/or thoughtful analysis**. When appropriate, include analysis and information of **cost overruns or high unit costs**, and changes to work plan or budget not requiring prior approval from EPA. We encourage photo documentation - please attach to the report as a separate document.

<b>23a. Subaward Work Plan Component/Task:</b> Task 1: Project Management					
<b>23b. 2012 Action Agenda Near-Term Action(s) Supported:</b> C2.4.2					
<b>*23c. Estimated Costs:</b> \$20,133.00 <b>Actual Costs to Date:</b> \$16,296.95 <b>(If required to report – contact your Project Manager)</b>					
23d. Sub-Task No.	23e. Sub-Task Description (include due date)	*23f. Date of Status	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks
1.1	Develop a list of all potential project stakeholders and their contact information: Gradient and SAE will work with Ecology to identify potential project stakeholders. Names, affiliations, and up-to-date contact information will be collected for each potential stakeholder in a tabular form.	3/31/2017	COMPLETED	One copy of the list of stakeholders	This sub-task has been completed (see 2.1.1 and 2.1.2 for details). Both lists have been created and approved. List will be updated as needed.

	This table will become the deliverable for this task.				
1.2	Develop a work plan and communications strategy for the project to engage stakeholders: Gradient will draft an outreach email for distribution to the stakeholder list produced from the previous task. The outreach email will include brief explanatory text describing the objectives and scope of the project, as well as a general open request for participation. Gradient will then draft a script to be used on follow up phone calls with potential stakeholders. Gradient will also create a schedule for regular communication with stakeholders. The finalized work plan, communications schedule, outreach email and phone conversation scripts will constitute the deliverables for this task.	3/31/2017	COMPLETED	communications strategy work plan	Draft was submitted. No comments were received back--communications strategy finalized March 2017.
1.3	General project management: Duties will include regular communication with the Ecology project manager, preparation of quarterly progress reports, sharing information with the stakeholder group, and monitoring the budget and overall progress.	11/22/2017	CURRENT	ongoing monthly-to-quarterly progress reports	Monthly progress meetings are being held, and will continue to be thru the duration of the project.

**23a. Subaward Work Plan Component/Task:** Task 2: Stakeholder Engagement

**23b. 2012 Action Agenda Near-Term Action(s) Supported:** C2.4.2

**\*23c. Estimated Costs:** \$28,656.00

**Actual Costs to Date:** \$20,419.45

**(If required to report – contact your Project Manager)**

23d. Sub-Task No.	23e. Sub-Task Description (include due date)	*23f. Date of Status	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks
2.1	Identify, reach out, and engage stakeholders in the research project: Gradient and SAE will send the	3/31/2017	COMPLETED	The development of the stakeholder roundtable will be initiated and	Outreach to create the stakeholder roundtable and working group (see attached



	<p>outreach explanatory email providing background for the project and expectations to roundtable participants. Gradient and SAE will then specifically follow up with the relevant experts by phone. The follow up calls will also be used to gauge the willingness of potential stakeholders to take on further responsibility as members of the stakeholder roundtable. In our proposed approach, the stakeholder roundtable is distinct from the general group of interested parties who will receive email updates, quarterly newsletters, and attend some quarterly webinars as needed/requested. In contrast, the stakeholder roundtable participants will be responsible for regularly attending web conferences, providing critical input to the final deliverable, quarterly newsletters, and generally employed as a technical resource to address specific issues as they arise. Gradient and SAE will consult with Ecology as to the possible members of the roundtable. The deliverable will consist of a list of individuals contacted, and their response concerning their willingness to be involved either as a general stakeholder or as a member of the roundtable.</p>			completed within the first quarter (3-4 months) from the contract start date	informational kickoff meeting March 2017 newsletter) has been completed.
2.2	<p>Creation of a Stakeholder Roundtable: Gradient and SAE will recruit experts from automotive backgrounds. These individuals may be identified from a variety of groups: SAE members, the Green Chemistry Steering Committee, Academic institutions, Vehicle maintenance service providers, Local governments, and Environmental organizations (e.g., Washington Stormwater Center). We will work to establish a diverse group representative of a wide variety of backgrounds and expertise. The stakeholder group will</p>	11/22/2017	CURRENT	A list of individuals contacted for the stakeholder roundtable and the final list of roundtable members.	The stakeholder roundtable has been created and currently has 18 members. The working group has been created, and consists of 14 members.



	function in an advisory capacity throughout the project, and specific stakeholders may be interviewed or asked to contribute based on the results of the literature review and discussions during the quarterly webinars. The deliverable will consist of a roster of the roundtable members, including their affiliations and contact information. In addition, the roster will indicate the chair and/or co-chair.				
2.3	Facilitate Roundtable Meetings: Gradient will host regular web conferences (at least quarterly, with additional events scheduled as needed and as funds permit) to discuss project related tasks, information needs, progress updates, etc. Roundtable members will report based on their own expertise or based on interviews from within their respective organizations. Gradient will provide meeting agendas with targeted areas for discussion, as well as updated meeting materials. The six proposed web conferences will constitute the deliverable for this task. Topics will be determined by Gradient and discussed with Ecology prior to the web conferences.	11/22/17	PLANNED	Six quarterly webinar meetings held	Meetings held on 4/28/17, 6/20/17, and 9/6/17
2.4	Meeting minutes. The contractor will compile and distribute the meeting minutes from the webinars. The meeting minutes will serve as the deliverables for this task.	11/22/17	PLANNED	minutes for each meeting	see 2.2.3.

**23a. Subaward Work Plan Component/Task:** Task 3: Research and Identification of Alternatives

**23b. 2012 Action Agenda Near-Term Action(s) Supported:** C2.4.2

**\*23c. Estimated Costs:** \$69,862.00

**Actual Costs to Date:** \$36,878.65

**(If required to report – contact your Project Manager)**

23d. Sub-Task No.	23e. Sub-Task Description (include due date)	*23f. Date of Status	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks
3.1	Conduct a literature review of the current state of industry design efforts related to preventing vehicle leaks: An SAE taxonomist will conduct a literature search identifying the most up-to-date and relevant information related to gasket and seal technologies, vehicle leaks, and stormwater impacts.	11/22/17	CURRENT	The deliverable will consist of a bibliography of all documents identified as part of the literature search as well as a short summary discussing which articles are most relevant and how they relate to the goals of the project.	Literature review incorporated into draft report document. Ongoing review of literature.
3.2	Conduct interviews or surveys, and compile information on current design and maintenance efforts: Gradient and SAE will collect input from the roundtable members including automotive manufacturers and maintenance providers, who are in the best position to know about current design and maintenance procedures. This task includes visiting automakers and maintenance facilities for information gathering purposes. Because the review and discussion of this information is expected to be part of the report task, we do not expect to duplicate efforts by summarizing all of the information received on an on-going basis for this task.	11/22/17	CURRENT	The deliverable for this task will consist of summary interview notes which may relate to input received from roundtable members.	Ongoing discussions with working group members on specific topics (e.g., chemical constituents in vehicle fluids)
3.3	Identify innovative technologies and onboard diagnostics: Information on innovative technologies and onboard diagnostics will be collected as part of the literature review. Data gaps will be addressed via discussions with relevant experts at the quarterly web conferences, or separately scheduled interviews as needed.	11/22/17	CURRENT	The deliverable for this task will consist of the web conference minutes in which these topics are discussed.	Literature review incorporated into draft report document. Ongoing review of literature.

3.4	Identify potential sources of vehicle leaks; the frequency and estimated volume of leaks as related to the age of the vehicle; leakage rates based on current published, peer-reviewed research data from the Puget Sound region or U.S. fleet data from the Bureau of Transportation Statistics or other Ecology-approved sources of data to identify potential management options: Gradient will review literature collected by the SAE taxonomist, and use experts on the roundtable as a resource to address data gaps.	11/22/17	CURRENT	The deliverable for this task will consist of verbal reports to Ecology during the monthly project management meetings. There will be no written summaries of this information separate from what is included in the final report.	Literature review incorporated into draft report document. Ongoing review of literature.
3.5	Identify research on safer chemical alternatives: Gradient's librarians will conduct a search for potential chemicals that pose a reduced hazard to human health and the environment. Gradient will use the hazard identification tool GreenScreen List Translator ( <a href="http://www.greenscreenchemicals.org/method/greenscreen-list-translator">http://www.greenscreenchemicals.org/method/greenscreen-list-translator</a> ) to compare these potential alternatives to chemicals currently in use.	11/22/17	CURRENT	The deliverable for this task will consist of verbal reports to Ecology during the monthly project management meetings. There will be no written summaries of this information separate from what is included in the final report.	Literature review incorporated into draft report document. Ongoing review of literature.
3.6	Identify potential policy options, including incentives to advance technical solutions: Gradient will work with Ecology to develop policy options for addressing vehicle fluid leaks and will then provide these for discussion to the roundtable for feedback.	11/22/17	CURRENT	The results of this discussion would then be circulated to the larger stakeholder group for review and additional input. This will constitute the task deliverable.	Literature review incorporated into draft report document. Ongoing review of literature.
3.7	Identify future research needs and funding beyond the scope of the current project: Based on the results of the literature review, roundtable discussions, and interviews, Gradient will work with Ecology to identify lessons learned and future research needs beyond the scope of the current project.	11/22/17	PLANNED	A bibliography will be created for any literature identified during the searches undertaken in this task. Results of research activities will be disseminated during project team meetings and stakeholder roundtable webinars.	Literature review incorporated into draft report document. Ongoing review of literature.

				All information will be summarized in the deliverable developed under Task 4.	
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**23a. Subaward Work Plan Component/Task:** Task 4: Report Findings

**23b. 2012 Action Agenda Near-Term Action(s) Supported:** C2.4.2

**\*23c. Estimated Costs:** \$30,719

**Actual Costs to Date:** \$3,422.25

**(If required to report – contact your Project Manager)**

23d. Sub-Task No.	23e. Sub-Task Description (include due date)	*23f. Date of Status	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks
4.1	Summary of research findings: Research findings obtained as a result of Task 3 will be summarized in a report with appropriate citations, comment about the reliability and level of uncertainty associated with the data, and a discussion of whether the information is useful for identifying solutions to the problem of vehicle fluid leaks or whether it indicates data gaps that need to be addressed.	11/22/2017	PLANNED	The portion of the final project report addressing research findings will constitute the deliverable for this task.	
4.2	Identify drivers and barriers to preventing vehicle leaks using automotive technologies: The report will discuss potential institutional, regulatory, and market drivers and barriers that may affect implementation of solutions to the issue of vehicle fluid leaks. We expect that the information needed to support this discussion will come equally from the literature review task and from discussions with roundtable members.	11/22/2017	PLANNED	The portion of the final project report addressing potential drivers for, and barriers to, improvement will constitute the deliverable for this task.	
4.3	Identify policy options and incentives to accelerate efforts to reduce vehicle leaks using automotive technologies: Based on discussions with Ecology	11/22/2017	PLANNED	The portion of the final project report addressing possible policy options will	

	staff, the report will discuss possible ways to encourage vehicle fluid leak prevention and mitigation. The portion of the final project report addressing possible policy options will constitute the deliverable for this task.			constitute the deliverable for this task.	
4.4	The contractor will provide a summary of findings and candidate list of the Global Automotive Declarable Substances List (GADSL) that are expected to be present in materials or vehicle parts related to lubricants, gaskets, seals, adhesives, or other products that may be released from vehicles to stormwater. Based on the results of the literature search and stakeholder discussions (i.e. web conferences and interviews), Gradient will review the GADSL for chemicals expected to be present in materials or vehicle parts related to lubricants, gaskets, seals, adhesives, or other products that may be released from vehicles to stormwater.	11/22/2017	PLANNED	A summary list of the chemicals of interest, to be included in the report, will constitute the deliverable for this task.	
4.5	Identify areas for further research or work: Throughout the project, Gradient will maintain a list of data gaps and areas for future research which may be identified in the literature search, roundtable discussions, and interviews. These will be listed and briefly discussed in the final project report.	11/22/2017	PLANNED	The portion of the final project report addressing future research options will constitute the deliverable for this task.	
4.6	Conduct at least one web conference/webinar or other appropriate public event that reports the results of the project: The final summary report will be presented at a final web conference (date to be determined). Furthermore, Gradient will submit an abstract for presentation of this research at a public event (exact meeting to be determined and agreed on by Gradient and Ecology).	11/22/2017	PLANNED	The final summary report and public communications will be delivered by the project deadline data.	

## CHALLENGES AND SOLUTIONS (specific to reporting period)

*24a. Task No., Sub-Task No.	*24b. Challenge	*24c. Solution
Contract needs two month extension to compensate for late start due to Ecology contracting delays.	Currently the contract is approximately 16.5 months in duration for an 18 month project (per the RFP). Project timeline reflects 18 months.	Amend contract over next FEATS reporting period to add the lost time.

## HIGHLIGHTS/LESSONS LEARNED/REFLECTIONS

\*25.

Highlights:

Three working group meetings held, consistent attendance. One additional meeting planned for 2017

Work initiated on draft report

Project on track and within budget -- everything in place to be successful.





## EPA Puget Sound Financial and Ecosystem Accounting Tracking System (FEATS) v. September 2012 for Lead Organization Subawardees

*Photo by Rebecca Pirtle, Editor, Kingston Community News (Doe-Kag-Wats Estuary of the Suquamish Tribe)*

### PROJECT INFORMATION

<b>1. Federal Grant Number</b>	PC-00J899-01	<b>*2a. Reporting Period Start Date:</b>	4/1/2017	<b>*2b. Reporting Period End Date:</b>	10/31/2017
<b>3. Subaward Organization (Name and complete address including zip code)</b> Name: Tacoma-Pierce County Health Department Address 1: 3629 South D Street Address 2: City: Tacoma State: WA Zip Code: 98418-6813			<b>4. Subaward Project Manager Contact Information</b>  Name: Brad Harp Phone: (253) 798-2851 Ext: Fax: (253) 798-7663 Email: bharp@tpchd.org		
<b>5a. EPA Program</b>  LO - Toxics/Nuts		<b>5b. Subaward Project Title and Contract No.</b>  Penrose Point Nutrient Reduction Project-G1500046		<b>*6. Collaborating Organizations/Partners</b>  Pierce Conservation District	

<b><u>Subawardee Submission Instructions:</u></b>  LO fills in the white boxes. Subawardee fills in the yellow boxes (boxes with asterisks). Refer to guidance document for how to fill out the boxes. After filling out the yellow boxes, save and e-mail it to your LO Project Manager for approval. LO will roll up the information and submit to EPA for approval.	<b>LO Project Manager:</b> Blake Nelson <b>LO:</b> Toxics and Nutrients <b>Phone:</b> 360-407-6940 <b>email:</b> blake.nelson@ecy.wa.gov  <b>LO Program Coordinator:</b> Blake Nelson <b>LO:</b> Toxics and Nutrients <b>Phone:</b> 360-407-6940 <b>email:</b> blake.nelson@ecy.wa.gov  <b>EPA Project Officer:</b> Gina Bonifacino	<b>*7a. Name/Title of Person Submitting Report</b>	Brad Harp Program Manager
		<b>*7b. Date Report Submitted</b>	



## FUNDING/COST ANALYSIS

8a. Total Assistance Amount Awarded:	\$248,164.00	8b. Funding Year (Federal Fiscal Year Funds Appropriated)	FY 2014 ----- ----- -----	*9. Amount Spent To-Date:	\$133,067.67	*10. Amount Reimbursed To-Date:	\$117,650.94
11. Match Amount Required	\$0.00	*12. Total Match Amount Spent and Documented To-Date:	\$0.00	*13. Have you experienced any cost overruns or high unit costs?	No		
*14. What issues or questions do you need the LO Project Manager to respond to?		Our costs for Task 2, water quality sampling, are higher than expected but our updated estimated costs for Task 3, Sanitary Surveys, are much less than previously anticipated. Hence, we have completed a budget variance request form to move funds between these two tasks to reflect our actual costs.					

## BUDGET UPDATE

	15a. APPROVED BUDGET			*15b. SPENT TO-DATE		
	LO (EPA) Funds	MATCH	TOTAL	LO (EPA) Funds	MATCH	TOTAL
Personnel	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require
Fringe Benefits	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require
Travel	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require
Equipment	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require
Supplies	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require
Contracts	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require
Other	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require
TOTAL DIRECT CHARGES	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require
Indirect Charges	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require
TOTAL	\$248,164.00	\$0.00	\$248,164.00	\$133,067.67	\$0.00	\$133,067.67
*Explain Any Discrepancies:						

## ECOSYSTEM GOALS ADDRESSED

16a. Primary Goal	Human Health				
16b. Additional Goals	Water Quality	Healthy Habitat	Healthy Species	-----	-----

## DIRECT THREATS ADDRESSED

17a. Primary Threat	Surface Water Loading/Runoff from the Built Env				
17b. Secondary Threat(s)	Onsite Sewage Systems	-----	-----	-----	-----

## LINKAGES TO PUGET SOUND ACTION AGENDA (Version Adopted August 2012)

18a. Primary Strategic Initiative	Urban Stormwater Runoff				
18b. Sub-Strategies Employed	C.9.1				
18c. Near-Term Actions Supported	C9.4.1				

## LINKAGES TO EPA PUGET SOUND PERFORMANCE MEASURES

19. Measure(s)	Habitat Restored/Protected	Shellfish Beds	-----	-----	-----
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## LINKAGES TO PUGET SOUND DASHBOARD INDICATORS

20a. Primary Indicator	Marine Water Quality				
20b. Secondary Indicators	Freshwater Quality	Estuaries	On-Site Sewage	-----	-----

## PROJECT LOCATION

21a. Latitude	47.25935	21b. Longitude	-122.743976
21c. Hydrologic Unit Code	17110015 - Nisqually	-----	-----
21d. Action Area	South Central Puget Sound	-----	-----

## MEASURES OF SUCCESS (Key Outputs)

*22a. Description (e.g., "shellfish beds reopened")	*22b. Unit (e.g., "acres")	*22c. Project Target ("number")	*22d. Project Measure To-Date ("number")
Sanitary Survey assessment	site visit	35	0
Identify and correct failing septic systems	septic system	5	1
Farm technical assistance	BMPs	3	12
Nutrient analysis	soil sample	15	11
White paper	report	1	0
Septic incentives	pumpings	15	0
"	system risers	10	0
Focus Group sessions	group	3	3
Provide information	workshop	3	2

## PROJECT MILESTONES

**Instructions:** In the tables below, please explain your progress toward meeting agreed outputs for the period, **reasons for slippages**, and any additional information including **reflections, lessons learned, and/or thoughtful analysis**. When appropriate, include analysis and information of **cost overruns or high unit costs**, and changes to work plan or budget not requiring prior approval from EPA. We encourage photo documentation - please attach to the report as a separate document.

<b>23a. Subaward Work Plan Component/Task:</b> Task 1 – Project Administration/Management					
<b>23b. 2012 Action Agenda Near-Term Action(s) Supported:</b> C9.4.1					
<b>*23c. Estimated Costs:</b> \$17,001 <b>Actual Costs to Date:</b> \$24,672.44					
23d. Sub-Task No.	23e. Sub-Task Description (include due date)	*23f. Date of Status	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks
A	The RECIPIENT will administer the project. Responsibilities will include, but not be limited to: submitting a quality assurance project plan (QAPP) waiver form and if required a QAPP for the project; maintenance of project records; submittal of payment vouchers,	3/31/2017	CURRENT	Submittal of required performance items.	The QAPP was approved by Ecology on April 27, 2016 and water quality sampling began on June 16, 2016.

	fiscal forms, and progress reports; submittal of semi-annual FEATS reports, compliance with applicable procurement, contracting, and interlocal agreement requirements; application for, receipt of, and compliance with all required permits, licenses, easements, or property rights necessary for the project; and submittal of required performance items.				
B	The RECIPIENT will manage the project. Efforts will include conducting, coordinating, and scheduling project activities and assuring quality control. Every effort will be made to maintain effective communication with the RECIPIENT's designees; ECOLOGY; all affected local, state, or federal jurisdictions; and any interested individuals or groups. The RECIPIENT must carry out this project in accordance with any completion dates outlined in this agreement.	3/31/2017	CURRENT	Manage the project.	Project management is proceeding, including the writing of this current FEATS report.
C	The RECIPIENT must ensure this project is completed according to the details of this agreement. The RECIPIENT may elect to use its own forces or it may contract for professional services necessary to perform and complete project-related work.	3/31/2017	CURRENT	Perform and complete project related work.	Most of the project work is being conducted by Health Department staff. Task 4 is primarily being conducted by Pierce Conservation District. The contract with Pierce Conservation District went into effect the first quarter of 2016.

**23a. Subaward Work Plan Component/Task:** Task 2 – Water Quality Sampling

**23b. 2012 Action Agenda Near-Term Action(s) Supported:** C9.4.1

**\*23c. Estimated Costs:** \$67,026.00

**Actual Costs to Date:** \$72,501.64

23d. Sub-Task No.	23e. Sub-Task Description (include due date)	*23f. Date of Status	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks
1	A. The RECIPIENT will provide stormwater sampling described in the	3/31/2017	CURRENT	Collect at least 15 stormwater samples for	Stormwater sampling began in October 2016 and to date three

	<p>approved QAPP. Sampling will occur at the following locations:</p> <ul style="list-style-type: none"> <li>The storm drainage system in the Penrose Point Watershed will be sampled to identify illicit discharges. Water samples will be collected at key locations during rain events of between 0.2 and 1.0" rain in a 24-hour period. The samples will be analyzed for fecal coliform, bacteria, water temperature, pH, and conductivity. Water samples from a subset of locations will also be analyzed for Nitrate plus Nitrite, Ammonia, Total Kjeldahl Nitrogen, and Total Phosphorus.</li> <li>Bay Lake Sampling - One goal for the project is to reduce toxic algae blooms in Bay Lake and the potential for cyanotoxins to accumulate in the marine biota in Mayo Cove. To assess success towards this goal, selected locations on Bay Lake will be monitored weekly during the typical algae growing season (May through October) and toxic algae (cyanobacteria) density and extent will be tracked. When there is a significant amount of toxic algae in Bay Lake such that the Health Department has issued a toxic algae advisory, algae samples will be collected and analyzed for cyanotoxins. At least twice each summer in both 2015 and 2016, water samples will be collected from near the deepest part of Bay Lake, at the surface, mid-depth, and bottom and analyzed for Nitrate plus Nitrite, Ammonia, Total Kjeldahl Nitrogen, Orthophosphate, and Total Phosphorus. In addition, temperature, pH, Conductivity, and dissolved oxygen profiles will be taken at 0.5 meter increments and secchi depth will be measured.</li> <li>Mayo Cove shoreline evaluation sampling - The Health</li> </ul>			fecal coliform and nutrient analysis.	<p>stormwater sampling events have been conducted, with 18 samples being collected. However, fecal coliform samples were not collected during the first event so it is anticipated that one additional stormwater sampling event will be conducted in April 2017.</p> <p>The Bay Lake toxic algae sampling is progressing as expected and the inlake sampling was conducted twice this past summer, as per the grant agreement and QAPP. The next inlake sampling event is scheduled for June 2017.</p>
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	<p>Department will conduct shoreline evaluations on Mayo Cove to identify and correct sources of pathogens and nutrients. The shoreline evaluation work will build upon the existing twenty seven monitoring locations that have already been established. All of these locations will be sampled once in 2015 and twice in 2016 (once during the wet season and once during the dry season) for fecal coliform bacteria, water temperature, pH, and conductivity. Flows will either be measured or estimated. In addition, the tributaries with flows greater than approximately 25 gallons per minute will be sampled for a suite of nutrients, including: Nitrate plus Nitrite, Ammonia, Total Kjeldahl Nitrogen, and Total Phosphorus.</p> <p>B. The RECIPIENT will resample flows if a fecal coliform count is equal to or greater than 200 colony forming units (cfu)/100 ml. If the re-sample result is also equal to or greater than 200 cfu/100ml, the upland adjacent property will be investigated. If a failing septic system is suspected, the property will be dye tested. Property owners will be provided technical assistance if the problem is a failing septic system and the property owner will be directed to a financial assistance program, where appropriate, to expedite repairs. If the high counts of bacteria are due to poor animal keeping practices, the site will be referred to the Pierce Conservation District (PCD).</p> <p>C. The RECIPIENT will enter all data meeting the QAPP criteria into ECOLOGY's EIM database.</p>				
2	"	3/31/2017	CURRENT	Collect at least 45 Mayo Cove tributaries samples for fecal coliform and at least 15	One shoreline sampling event was conducted in October 2016, with the collection of 31 samples for fecal coliform enumeration and seven samples for nutrient



				samples for nutrient analysis.	analysis. The next shoreline sampling event is anticipated to be conducted in April 2017.
3	"	3/31/2017	CURRENT	Collect at least 12 samples from Bay Lake for nutrient analysis and 30 samples for secchi depth, water temperature, pH, conductivity and, possibly, dissolved oxygen.	Two inlake sampling events have been conducted and 6 samples from Bay Lake have been collected for nutrient analysis. 16 samples have been collected for conventional parameter (pH, Temperature, Conductivity, and Dissolved Oxygen) measurements. Secchi depth has also been measured. .
4	"	3/31/2017	CURRENT	Collect at least 40 samples of toxic algae from Bay Lake to characterize changes in toxic algae density and extent over the course of the project.	The Bay Lake toxic algae sampling has been ongoing since May 2015, utilizing the sampling protocol developed by the Department of Ecology ( <a href="https://www.nwtoxicalgae.org/">https://www.nwtoxicalgae.org/</a> ). to date, 59 site visits have been conducted, 24 algae samples have been collected and analyzed down to genus, and 18 algae samples have been sent to the King County Environmental Laboratory for analysis. This sampling has resulted in the issuing of several toxic algae advisories by the Health Department. The most recent toxic algae advisory for Bay Lake was a Caution advisory, issued on August 16, 2016 and lifted on December 14, 2016.

**23a. Subaward Work Plan Component/Task:** Task 3 – Bay Lake and Mayo Cove Shoreline Sanitary Surveys

**23b. 2012 Action Agenda Near-Term Action(s) Supported:** C9.4.1

**\*23c. Estimated Costs:** \$72,388.00

**Actual Costs to Date:** \$0.00

23d. Sub-Task No.	23e. Sub-Task Description (include due date)	*23f. Date of Status	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks
1	<p>The RECIPIENT will conduct sanitary survey work in 2016 on approximately 30 Bay Lake waterfront properties and 80 properties on Mayo Cove to assess septic system function. Each homeowner will be asked a series of questions regarding their septic system and the property will be examined for signs of septic system failure. If there is an indication of a problem, the residence will be dye tested to determine if the septic system is failing. If the system is found to be failing, the Health Department will provide technical assistance and assist with finding possible financial assistance to expedite the repair.</p> <p>The sanitary survey will utilize an approach, developed and refined through a number of projects, that includes information and guidance on a variety of household actions to reduce nutrient loading and toxics to surface waters. This will be accomplished by providing more comprehensive technical assistance during the sanitary surveys, including:</p> <ul style="list-style-type: none"> <li>• OSS maintenance</li> <li>• How homeowners can take increased responsibility of their own OSS</li> <li>• Natural yard care practices</li> <li>• Use of "green" or less toxic household chemicals</li> <li>• Drinking water quality issues</li> <li>• Proper management of pet and/or agricultural waste</li> </ul>	3/31/2017	BEHIND SCHEDULE	Conduct at least 35 sanitary survey visits to assess septic system function.	<p>Staff are in the process of completing a sanitary survey on the shoreline of Rocky Bay and will next begin the sanitary survey on the Mayo Cove shoreline. This is expected to begin in May 2017. Once this survey is completed, or at least well underway, the Bay Lake sanitary survey will begin. The Bay Lake survey will likely be conducted from mid-June through August 2017.</p>
2	"	3/31/2017	CURRENT	Identify and correct approximately five failing septic systems.	One failing septic system was identified and corrected this period and another failure was identified just outside the watershed. This failure is

					impacting Von Geldern Cove, immediately north of Mayo Cove.
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**23a. Subaward Work Plan Component/Task:** Task 4 – Agricultural Best Management Practices (BMPs)

**23b. 2012 Action Agenda Near-Term Action(s) Supported:** C9.4.1

**\*23c. Estimated Costs:** \$35,750.00

**Actual Costs to Date:** \$6,708.16

23d. Sub-Task No.	23e. Sub-Task Description (include due date)	*23f. Date of Status	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks
1	<p>A.The RECIPIENT will provide outreach to residential and farm owners in the Penrose Point watershed which includes soil sampling for interested property owners to determine the correct fertilizer application rates and mixtures. Interested residents will receive a free soil sample as part of the sanitary survey if interested in pursuing natural yard care actions. Farms will receive free soil sampling if interested in working with the PCD to identify and implement best management practices to protect or improve water quality. Approximately 15 soil samples will be collected and analyzed as part of this project.</p> <p>B.The RECIPIENT will provide limited cost share funding to property owners for implementing best management practices. Cost share funds will be provided to assist with implementing manure management systems (manure removal or bin installation) to approximately three properties that develop a water quality plan.</p> <p>C.The RECIPIENT will ensure Pierce County Shellfish Partners will seek alternative sources to fund agricultural BMPs. The partners will explore other</p>	3/31/2017	CURRENT	Provide technical assistance to approximately six farms in the watershed and install BMPs at three farms or more.	<p>A "Build your Own Bin" workshop was held by Pierce Conservation District (PCD) in February 2017 to provide the building materials and show farmers how to construct their own bin for storing small amounts of manure. Three farmers from the Mayo Cove Watershed attended the workshop and built a manure bin. In addition, 15 other farmers from elsewhere on the Key Peninsula attended and most built bins, for a total of 12 bins being constructed. Two of the farmers in the watershed will be building additional bins and a bin will also be offered to another farmer in the watershed who was unable to attend the workshop. PCD had been working with another farmer in the watershed who needs a much larger manure bin. PCD decided not to pursue constructing this bin because they weren't confident it would address the resource concerns.</p>

	funding options that may increase the implementation of agricultural BMPs. The RECIPIENT along with partners will develop a white paper summarizing the findings.				
2	"	3/31/2017	CURRENT	Collect approximately 15 soil samples from farms for nutrient analysis.	PCD has collected 11 soil samples for nutrient analysis as part of this project.
3	"	3/31/2017	BEHIND SCHEDULE	Develop a white paper on alternative funding sources for agricultural BMPs on sites where property restrictions (such as parcel size) don't allow the NOAA buffer guidelines to fully be met.	Work on the paper is now expected to start again in the second quarter of 2017.

**23a. Subaward Work Plan Component/Task:** Task 5 – Septic System Incentives

**23b. 2012 Action Agenda Near-Term Action(s) Supported:** C9.4.1

**\*23c. Estimated Costs:** \$10,625.00

**Actual Costs to Date:** \$272.84

23d. Sub-Task No.	23e. Sub-Task Description (include due date)	*23f. Date of Status	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks
1	<p>A. The RECIPIENT will provide support for volunteer homeowner participation in periodic operation and maintenance inspections of their septic systems. Property owners within the Penrose Point Watershed will be encouraged to volunteer through financial incentives that cover a portion of the following:</p> <ul style="list-style-type: none"> <li>• An operation and maintenance inspection by a licensed professional</li> <li>• Septic tank pumping, if needed</li> <li>• the cost to improve access to septic tanks with risers to the ground surface</li> </ul>	3/31/2017	CURRENT	Provide O&M septic incentives to accomplish approximately 25 O&M inspections, with 15 septic tank pumpings and 10 systems risers installed.	O&M incentive funds have been promoted at the focus group meetings, the Key Peninsula Livable Community Fair in May 2016, and the Key Peninsula Healthy Waters Fair held at the Longbranch Improvement Club in July 2016. The incentive funds will also be promoted at the ShellFest event at Penrose Point State Park on Sunday, April 30, 2017. To date, funds available through another grant have been used to fund all incentive activities.

**23a. Subaward Work Plan Component/Task:** Task 6 – Community Engagement

**23b. 2012 Action Agenda Near-Term Action(s) Supported:** C9.4.1

**\*23c. Estimated Costs:** \$39,875.00

**Actual Costs to Date:** \$28,527.22

23d. Sub-Task No.	23e. Sub-Task Description (include due date)	*23f. Date of Status	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks
1	<p>The RECIPIENT will build upon ongoing education and outreach efforts funded through previous grants and SWM. The emphasis will be to provide guidance on:</p> <ul style="list-style-type: none"><li>• The operation and maintenance of septic systems</li><li>• Pet waste disposal</li><li>• Natural yard care</li><li>• Boater waste disposal</li><li>• and agricultural BMPs</li></ul> <p>The RECIPIENT will provide outreach information through a variety of methodologies, including social marketing tools, to ensure that the information is made available to the appropriate residents and visitors in the Penrose Point Watershed. The RECIPIENT will consider incorporating the successful components of the Model Stewardship Project, which is currently being implemented by Washington State University Cooperative Extension and Washington Conservation Commission in three nearby watersheds.</p>	3/31/2017	COMPLETED	Hold at least three focus groups sessions to assess community awareness of, and interest in, environmental stewardship in general and protecting and improving water quality in the Mayo Cove Watershed specifically	Three focus group meetings were held as part of this project. The first was held on January 12, 2016, the second on April 5, 2016, and the third on October 18, 2016.
2	"	3/31/2017	COMPLETED	Attend at least three community events to encourage environmental stewardship.	This subtask deliverable has been met, with three community events having been attended. Staff attended the Reinke Farm Tour on July 21, 2015, the March 15, 2016 meeting of the KGI Watershed Council, and the Key



					Peninsula Healthy Waters Fair at the Longbranch Improvement Club on July 23, 2016. Even though the deliverable has already been met, staff will also be attending ShellFest 2017, which will be held at Penrose Point State Park on April 30, 2017.
3	"	3/31/2017	CURRENT	Hold at least three workshops that provide information on septic system operation and maintenance, pet waste disposal, natural yard care, how to be an environmentally-protective boater, and/or agricultural BMPs.	The first workshop, focusing on septic systems, was held at the Vaughn Civic Center on the evening of October 20, 2015. The second workshop was the "Build a Bin" workshop hosted by PCD and held on February 4, 2017.

### CHALLENGES AND SOLUTIONS (specific to reporting period)

*24a. Task No., Sub-Task No.	*24b. Challenge	*24c. Solution
Task 6	It was difficult to recruit participants for the focus groups. Originally, we planned to provide a financial stipend to participants, along with beverages and snacks. However, it became apparent that grant funds could not be used for either stipends or food.	Staff purchased snacks and beverages with their own money. Another program at TPCHD provided funding to hire a company that recruits focus group participants and this company selected the participants for the October 2016 focus group meeting.

### HIGHLIGHTS/LESSONS LEARNED/REFLECTIONS

*25.
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Based upon the community engagement work conducted to date, it is apparent that many community members, and especially people who live along the marine shoreline, are strongly opposed to commercial geoduck aquaculture operations. Numerous community members think our pollution identification and correction work and our implementation of septic system operation and maintenance inspections (O&M) are being conducted solely to benefit the commercial shellfish industry and pave the way for more aquaculture operations.

The “Build your own bin” workshop was a pilot project drawing upon social marketing ideas about identifying barriers and addressing these barriers in an effort to change behaviors. Rather than doing focus groups this pilot project was instead set up to test barrier hypothesis. The desired behavior was to cover and manage manure. The barrier hypothesis was that landowners perceived that building a bin was too difficult, expensive and time consuming. The target audience was livestock owners with a smaller amount of livestock (approximate total weight under 2,400 pounds) within the Mayo Cove watershed (however due to the small number of farms in Mayo Cove the audience was extended to surrounding shellfish growing areas). Interested farmers had to take a workshop or an online tutorial about nutrient management and pass a nutrient management test to qualify for the “build your own bin” workshop. This requirement made sure there was landowner commitment and also made sure landowners would know how use the bin to manage the manure on their farm. At the “Build” workshop landowners were taught how to construct the bin and each landowner got to bring home pre-cut materials to construct their own bin. The build workshop boosted landowner know-how, confidence and motivation. It also addressed the barrier of “lack of time”. It turned out that all of the attendees (including the instructors as we finished in half the time) had a misconception about how much time it would take to construct the bin and how difficult it would be. Even elderly landowners were surprised to learn that they could fairly easily and quickly construct their own bin. To keep up the motivation for the landowners a time requirement was placed on completing the bin and appointments were set up for PCD staff to check-off that the bins had been placed in an appropriate location and completed. Rave reviews came in from every single participant of the workshop. As neighbors and other community members are seeing and hearing about these bins PCD is being contacted by additional landowners requesting a second workshop. PCD now has a waiting list and hopes to be able to build on the success from the pilot and offer additional Bin Building workshops in the future.



## EPA Puget Sound Financial and Ecosystem Accounting Tracking System (FEATS) v. September 2012 for Lead Organization Subawardees

*Photo by Rebecca Pirtle, Editor, Kingston Community News (Doe-Kag-Wats Estuary of the Suquamish Tribe)*

### PROJECT INFORMATION

<b>1. Federal Grant Number</b>	PC-00J899-02	<b>*2a. Reporting Period Start Date:</b>	4/1/2017	<b>*2b. Reporting Period End Date:</b>	9/30/2017
<b>3. Subaward Organization (Name and complete address including zip code)</b> Name: Snohomish County Address 1: 3000 Rockefeller Ave, M/S 607 Address 2: City: Everett State: WA Zip Code: 98201-			<b>4. Subaward Project Manager Contact Information</b> Name: Marisa Burghdoff Phone: (425) 388-3204 Ext: Fax: ( ) - Email: Marisa.Burghdoff@snoco.org		
<b>5a. EPA Program</b>  <b>LO - Toxics/Nuts</b>		<b>5b. Subaward Project Title and Contract No.</b>  Snohomish County Lakewise-G1500048		<b>*6. Collaborating Organizations/Partners</b>	

<b><u>Subawardee Submission Instructions:</u></b>  LO fills in the white boxes. Subawardee fills in the yellow boxes (boxes with asterisks). Refer to guidance document for how to fill out the boxes. After filling out the yellow boxes, save and e-mail it to your LO Project Manager for approval. LO will roll up the information and submit to EPA for approval.	<b>LO Project Manager:</b> Diane Dent <b>LO:</b> Department of Ecology <b>Phone:</b> 360-407-6616 <b>email:</b> Diane.Dent@ecy.wa.gov  <b>LO Program Coordinator:</b> Diane Dent <b>LO:</b> Department of Ecology <b>Phone:</b> 360-407-6616 <b>email:</b> Diane.Dent@ecy.wa.gov  <b>EPA Project Officer:</b> Gina Bonifacino	<b>*7a. Name/Title of Person Submitting Report</b>	Marisa Burghdoff
		<b>*7b. Date Report Submitted</b>	10/20/2017

## FUNDING/COST ANALYSIS

8a. Total Assistance Amount Awarded:	\$295,678.00	8b. Funding Year (Federal Fiscal Year Funds Appropriated)	FY 2014 ----- ----- -----	*9. Amount Spent To-Date:	\$250,229.84	*10. Amount Reimbursed To-Date:	\$233,578.19
11. Match Amount Required	\$0.00	*12. Total Match Amount Spent and Documented To-Date:	\$0.00	*13. Have you experienced any cost overruns or high unit costs?	No		
*14. What issues or questions do you need the LO Project Manager to respond to?		None at this time.					

## BUDGET UPDATE

	15a. APPROVED BUDGET			*15b. SPENT TO-DATE		
	LO (EPA) Funds	MATCH	TOTAL	LO (EPA) Funds	MATCH	TOTAL
Personnel	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require
Fringe Benefits	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require
Travel	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require
Equipment	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require
Supplies	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require
Contracts	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require
Other	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require
TOTAL DIRECT CHARGES	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require
Indirect Charges	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require	LO does not require
TOTAL	\$295,678.00	\$0.00	\$295,678.00	\$250,229.84	\$0.00	\$250,229.84
*Explain Any Discrepancies:						

## ECOSYSTEM GOALS ADDRESSED

16a. Primary Goal	Water Quality					
16b. Additional Goals	Human Health	Human Well-Being	Healthy Habitat	Healthy Species	-----	-----

## DIRECT THREATS ADDRESSED

17a. Primary Threat	Surface Water Loading/Runoff from the Built Env					
17b. Secondary Threat(s)	Onsite Sewage Systems	Development	-----			

## LINKAGES TO PUGET SOUND ACTION AGENDA (Version Adopted August 2012)

18a. Primary Strategic Initiative	Urban Stormwater Runoff					
18b. Sub-Strategies Employed	C9.1					
18c. Near-Term Actions Supported						

## LINKAGES TO EPA PUGET SOUND PERFORMANCE MEASURES

19. Measure(s)	Habitat Restored/Protected -----					
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## LINKAGES TO PUGET SOUND DASHBOARD INDICATORS

20a. Primary Indicator	Freshwater Quality					
20b. Secondary Indicators	On-Site Sewage	Land Development	Cover	Toxics in Fish		

## PROJECT LOCATION

21a. Latitude	48.281382	21b. Longitude	-122.345185
21c. Hydrologic Unit Code	17110011 - Snohomish	17110008 - Stillaguamish	17110012 - Lake Washington
21d. Action Area	Whidbey	-----	-----

## MEASURES OF SUCCESS (Key Outputs)

*22a. Description (e.g., "shellfish beds reopened")	*22b. Unit (e.g., "acres")	*22c. Project Target ("number")	*22d. Project Measure To-Date ("number")
Quality Assurance Project Plan (QAPP)	QAPP	1	1
The project will prevent an estimated 240-285 pounds of phosphorus pollution from entering the target lakes.	pounds of phosphorus reduced	240	147
The project will prevent an estimated 2,225 - 3,100 pounds of nitrogen from entering the target lakes.	pounds of nitrogen reduced	2225	2624
a three-tiered evaluation report to determine project effectiveness based on the National Oceanic and Atmospheric Agency's guide to "Planning for Meaningful Evaluation" (NOAA 2012).	Report	1	0
Lake shorelines will be restored with vegetated buffers	acres restored	0.5	1
Shoreline restoration workshops and community outreach meetings held	public meetings	4	11
Eight septic system care workshops (acceptable to blank out any information that could be perceived as personal as the purpose is to provide proof of attendance number)	OSS care workshops	8	12
OSS rebates for participating households	OSS rebates	100	55
Rebates will be provided for up to 40 property owners to infiltrate polluted runoff that would otherwise flow into target lakes either directly or via inlet ditches or streams.	pollution infiltration rebates	10	0
Final Report	Final Report	1	1

## PROJECT MILESTONES

**Instructions:** In the tables below, please explain your progress toward meeting agreed outputs for the period, **reasons for slippages**, and any additional information including **reflections, lessons learned, and/or thoughtful analysis**. When appropriate, include analysis and information of **cost overruns or high unit costs**, and changes to work plan or budget not requiring prior approval from EPA. We encourage photo documentation - please attach to the report as a separate document.

**23a. Subaward Work Plan Component/Task:** 1 – Project Administration/ Management

**23b. 2012 Action Agenda Near-Term Action(s) Supported:** C9.1: TMDLs

**\*23c. Estimated Costs:** \$13,041.00

**Actual Costs to Date:** \$11,321.43

(If required to report – contact your Project Manager)

23d. Sub-Task No.	23e. Sub-Task Description (include due date)	*23f. Date of Status	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks
a	<p>A. The RECIPIENT will administer the project. Responsibilities will include, but not be limited to: maintenance of project records; submittal of payment vouchers, fiscal forms, and progress reports; submittal of semi-annual FEATS reports, compliance with applicable procurement, contracting, and interlocal agreement requirements; application for, receipt of, and compliance with all required permits, licenses, easements, or property rights necessary for the project; and submittal of required performance items.</p> <p>B. The recipient will manage the project. Efforts will include conducting, coordinating, and scheduling project activities and assuring quality control. Every effort will be made to maintain effective communication with the recipient's designees; Ecology; all affected local, state, or federal jurisdictions; and any interested individuals or groups. The recipient must carry out this project in accordance with any completion dates outlined in this agreement.</p> <p>C. The RECIPIENT must ensure this project is completed according to the details of this agreement. The RECIPIENT may elect to use its own forces or it may contract for professional services necessary to perform and complete project-related work.</p>	9/30/2017	COMPLETED	Semi-annual FEATS reports reporting on progress of all tasks. (ongoing thru March 31, 2017)	Completed for March 31, 2015; Sept 30, 2015; March 31, 2016; Sept 30, 2016; March 31, 2017; Sept 30, 2017
b	" "	9/30/2017	COMPLETED	Monthly to quarterly payment requests with accompanying progress reports. (ongoing thru March 31, 2017)	2015 - Q1, Q2, Q3, Q4 2016 - Q1, Q2, Q3, Q4 2017 - Q1, Q2- Complete but not yet submitted



**23a. Subaward Work Plan Component/Task:** 2 – Outreach & Education - Evaluation & Dissemination

**23b. 2012 Action Agenda Near-Term Action(s) Supported:** C9.1: TMDLs

**\*23c. Estimated Costs:** \$68,303.00

**Actual Costs to Date:** \$51,029.65

**(If required to report – contact your Project Manager)**

23d. Sub-Task No.	23e. Sub-Task Description (include due date)	*23f. Date of Status	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks
a	<p>The RECIPIENT will conduct a strategic marketing campaign to target all eleven lake watershed communities. Marketing techniques will include:</p> <ul style="list-style-type: none"><li>• Direct mailings.</li><li>• Website and social media.</li><li>• Presentations at lake association meetings.</li><li>• Public water providers' newsletters (if applicable).</li></ul> <p>The RECIPIENT will update LakeWise program mailings for septic care workshops and their website (<a href="http://www.lakewise.org">www.lakewise.org</a>) to include new incentive information.</p> <p>The RECIPIENT will implement more intensive, community-based marketing at the Tier 1 lakes (Ketchum and Loma). In addition, the RECIPIENT will conduct similar community outreach at two of the Tier 2 lakes (Lost and Echo) during 2015.</p> <p>The RECIPIENT will initiate community outreach by identifying 5 to 15 key community leaders, using known contacts (e.g. pilot LakeWise participants, lake monitoring volunteers, and concerned citizens), lake associations, and targeted mailers/emails. In collaboration with community leaders, an outreach</p>	9/30/2017	COMPLETED	Two direct program mailer. (due Sept 30, 2017)	<p>- A direct program mailer tailored for each of the 11 target lakes was sent to all shoreline residents (spring/summer 2016). The mailer was then adapted for upland watershed landowners (fall 2016). A similar mailer was sent to 4 of the target lakes in 2017 (the remaining 7 could not support LakeWise visits until July, 2017 due to a budget shortfall. The goal was to increase LakeWise visibility, encourage workshop attendance, engage people in site visits, and advertise the shoreline restoration program for those who are eligible. The two mailers resulted in several site visits and higher workshop attendance.</p>

	<p>approach will be tailored for each of these four lakes, including community outreach events (e.g. social gatherings with light refreshments, lake clean-up events). Door-belling and community social media sites will may also be utilized by the RECIPIENT.</p> <p>Outreach and education activities will increase both awareness of lake nutrient pollution and resident desire to be part of the pollution solution. Success will be evidenced through increases in the following: LakeWise program participation and property certification, residential BMP implementation at target lake watersheds, workshop registration, and LakeWise website traffic.</p> <p>Other evidence of success will include replication of marketing techniques with other Snohomish County Surface Water Management programs and requests from other jurisdictions to partner in the LakeWise program and/or modify LakeWise marketing materials for their purposes.</p> <p>The RECIPIENT will LakeWise marketing will also promote and coordinate LakeWise marketing with the County's new, Ecology-funded, Clean Water Loan and Grant program. This valuable new resource enables the RECIPIENT to empower landowners by removing the which reduces the cost barrier to septic system repair/replacement.</p> <p>RECIPIENT resources will be applied to LakeWise outreach and education activities that focus on other LakeWise BMPs, such as natural lawn care workshops and pet waste management campaigns.</p> <p>The RECIPIENT will apply a three-tiered evaluation report to determine project effectiveness based on the</p>				
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	<p>National Oceanic and Atmospheric Agency's guide to "Planning for Meaningful Evaluation" (NOAA 2012). The three-tiers will consist of:</p> <p>1) Process Evaluation (near-term) will determine if immediate proposed outputs were completed within the grant timeframe and budget. Metrics will include the number of community events, workshops, attendees, mailers, etc.</p> <p>2) Output Evaluation (mid-term) will determine whether behavior change has occurred through adoption of nutrient-reducing BMPs. The LakeWise Clear Choices Checklist and database will be used to track landowner implementation of specific actions. Database queries will be used to estimate nutrient load reductions based upon documented landowner actions. Metrics will include the number of septic inspections conducted, square feet of shoreline restored or protected, number of pipes diverted from lakes/streams, etc. RECIPIENT resources will be used to determine the net impact of shoreline restoration by comparing shoreline vegetation at the project's conclusion with data from a comprehensive inventory of shoreline buffer conditions completed in 2009 for all public lakes in unincorporated Snohomish County. Another metric for behavior change will be the number of Clean Water Loan and Grant program referrals for assistance with septic system repair/replacement that come from Lakewise-sponsored venue events.</p> <p>3) Outcome Evaluation (long-term) will determine the impact of LakeWise program actions. Nutrient reductions</p>				
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	<p>from BMP actions will be immediate; however, detecting ambient water quality changes requires a longer timeframe than the grant project period. Snohomish County lake monitoring, underway since 1992, will continue beyond the grant period (subject to future annual funding approval by Snohomish County) at all target lakes on a monthly basis from June through September to assess nutrient concentrations (total phosphorus and total nitrogen), chlorophyll a, and water clarity and dissolved oxygen. The program's Quality Assurance Monitoring Plan will be submitted to Ecology for approval, and all target lake data collected during the grant period will be entered into Ecology's Environmental Information Management (EIM) system. The RECIPIENT will report on and disseminate findings using the LakeWise webpage (<a href="http://www.lakewise.org">www.lakewise.org</a>). Adaptation of all materials by nonprofit organizations will be permissible. The RECIPIENT will also share program information through local watershed groups, professional conferences, and by providing input to other Snohomish County and external jurisdictions or non-profits for purposed of developing similar programs.</p>				
b	" "	9/31/2017	CURRENT	Two direct mailers for each workshop event (20 total). (due March 31, 2017)	19 mailers were sent for septic system care workshops (2 for each workshop until 2017 when 1 was sent per workshop); 10 workshops have been held (1 workshop was cancelled for lack of interest)
c	" "	9/30/2017	COMPLETED	Inserts in water service providers' billings (if applicable). (due March 31, 2017)	1 water service provider (7 lakes water) included LakeWise septic workshop in their billings in 2015 and June 2016

d	" "	9/30/2017	COMPLETED	LakeWise website development/updates. (due March 31, 2017)	<p>Website has been updated to include:</p> <ul style="list-style-type: none"> <li>- LakeWise septic care info and rebates</li> <li>- LakeWise shorelines and shoreline restoration incentive info</li> <li>- LakeWise natural lawn care page</li> </ul>
e	" "	3/31/2017	COMPLETED	Attendance sheets at community meetings (acceptable to blank out any information that could be perceived as personal- purpose is to provide proof of attendance numbers) (due March 31, 2017)	<p>The County helped to plan, setup, advertise and provide outreach displays and talks at the following community events:</p> <ol style="list-style-type: none"> <li>1. Lake Ketchum celebration of the lake June 13, 2015.</li> <li>2. Lost Lake Neighborhood Block Party and Barbeque - July 11, 2015</li> <li>3. Sunday Lake Pie and Ice Cream Social - August 26, 2015 (this community event was in partnership with an ongoing Pollution and Identification Control project also being conducted by the County with funds from a Washington State Department of Ecology grant.</li> <li>4. Lake Loma water quality update - an event to identify community leaders for LakeWise and address ongoing lake health issues/toxic algae blooms</li> </ol> <p>In addition, Snohomish County attended the following 7 lake association meetings to provide updates on water quality and promote LakeWise. Two of the meetings led to planning community events:</p> <ol style="list-style-type: none"> <li>1. Lake Ketchum (5/2/2015; 5/21/2016; 10/22/2016)</li> <li>2. Flowing Lake (5/4/2015)</li> <li>3. Sunday Lake (6/2015)</li> <li>4. Sunday Lake (3/25/2017)</li> </ol>

					5. Lake Shoecraft (9/19/2017)
f	" "	9/30/2017	COMPLETED	A final Evaluation Report based on National Oceanic and Atmospheric Agency's guide to "Planning for Meaningful Evaluation" (NOAA 2012) (due March 31, 2017)	The final report including an evaluation survey of the target audience is mostly complete. It will be included with the final grant billing.
g	" "	9/30/2016	COMPLETED	Submission of the Snohomish County Lake Management Program Quality Assurance Monitoring Plan to Ecology for approval (due March 31, 2017)	The Lake Program QAMP was submitted, but upon receipt it was determined that a QAMP was not necessary and instead a NEP QAPP waiver form should be submitted. The waiver form was approved 2/17/2016
h	" "	9/30/2017	COMPLETED	Entry into Ecology's EIM database of all water quality data collected by the Lake Management Program at the 11 target lakes during the grant period. (due Sept 30, 2017)	Data will be uploaded once lab results are received, entered, and QC'd for Sept, 2017.
i	" "	3/31/2017	COMPLETED	Dissemination of program outreach materials and final report through: o Inclusion on the LakeWise website o Offers to present at local watershed groups such as the Snohomish-Stillaguamish Local Integrating Organization, the Snohomish Basin Salmon Recovery Forum, the Stillaguamish Watershed Implementation	- The LakeWise work from the NEP grant was presented at at the 2016 regional Salish Sea Ecosystem Conference in the session "Moving beyond education and outreach to behavior change" and her title was "LakeWise: Motivating and Inspiring Clear Choices for Healthy Lakes". - The same presentation as well as a separate presentation focused specifically on lake shoreline restoration was provided at the Washington State Lake Protection Association conference in October 2016 and the North America Lake Management



				Committee, and Stillaguamish Clean Water District Advisory Board. o Presentation at two or more professional conferences (e.g. Northwest Society for Ecological Restoration, Washington State Lake Protection Association, Salish Sea). (due March 31, 2017)	Society Conference in November 2016. - Offers were made to present at all of the local watershed groups and several scheduled for later in 2017 and early 2018 based on their current availability. - A LakeWise webpage was created to share program materials and evaluation results. (page has been created but will not be published until the final evaluation report is complete and uploaded).
j	" "	3/31/2017	COMPLETED	Technical guidance in replicating or expanding the LakeWise program and techniques at residential communities in other waterbody settings as requested (nearshore, river, stream, creeks, etc). (due March 31, 2017)	-As a result of the above presentations LakeWise program materials were provided to several individual lake associations throughout WA state and nationally including: Pierce County, WA who is working to apply for funds to start a similar outreach program; The Snohomish County Marine Resources Committee has also been utilizing lessons learned from the LakeWise program for recruiting landowners for the marine shoreline restoration; and the Cascade Water Alliance who manages the Lake Tapps, WA drinking water reservoir.

**23a. Subaward Work Plan Component/Task:** 3 – Shoreline Restoration Partnerships

**23b. 2012 Action Agenda Near-Term Action(s) Supported:** C9.1: TMDLs

**\*23c. Estimated Costs:** \$162,351.00

**Actual Costs to Date:** \$143,810.94

**(If required to report – contact your Project Manager)**

23d. Sub-Task No.	23e. Sub-Task Description (include due date)	*23f. Date of Status	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks
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a	<p>The RECIPIENT, in partnership with residential landowners, will complete shoreline restoration projects at up to 40 lakefront properties. The restoration projects will installconsist of installing vegetation buffers on at least 60% of each property shoreline to a minimum width of 35 feet, per the NMFS buffer guidelines. Physical structure buffer exemptions will be pursued with Ecology in cases where structures inhibit the achievement of the requisite 35-foot buffers. Shoreline restorations will include the following activities:</p> <ul style="list-style-type: none"> <li>• Development of site-specific planting plans that meet buffer requirements (or exemption qualification), including a minimum of 60% native plant species, and landowner approval.</li> <li>• Procurement of native plants, site preparation and plant installation. Any approved non-native species will be provided by landowners. Landowners and County resources will be used for site monitoring to determine planting success and for replanting, as necessary.</li> <li>• Formalized landowner agreements assuring restoration site maintenance by the landowner for a minimum of five years and permitting access by RECIPIENT staff for educational purposes and monitoring.</li> <li>• Secondary barriers of awareness and technical know-how will be addressed with a wider audience through developing and holding two shoreline restoration workshops focused on plant selection, planting plan design, site preparation, noxious weed control, and the benefits and aesthetics of lake shoreline buffers.</li> </ul>	3/31/2017	COMPLETED	Up to 3,200 linear feet (1.8 acres) of lake shorelines restored with vegetated buffers (due March 31, 2017)	<p>2271 linear feet of shoreline (1.2) acres were restored with vegetated buffers of 35 feet or greater. The restoration took place at 28 different properties. Nine other shoreline property with intact shorelines also committed to protecting their shoreline buffers.</p> <ul style="list-style-type: none"> <li>- 28 landowners signed landowner agreements for shoreline restoration</li> <li>- 24 shoreline restoration designs were completed (plus 2 by landowner; 2 by County staff)</li> <li>- 26 shoreline restoration projects were completed including site prep, invasive plant control, planting, and replacement planting as needed</li> <li>- 2 sites are prepped for planting and have plants ordered but are not complete. The planting will occur in November without the use of grant funds as the Washington Conservation Corps crew that was scheduled to do the planting was sent for hurricane relief.</li> </ul>
b	" "	9/30/2017	COMPLETED	Attendance sheets for two shoreline restoration workshops	Per an approved grant amendment we have changed this

				(acceptable to blank out any information that could be perceived as personal as the purpose is to provide proof of attendance numbers) (due March 31, 2017)	deliverable to a shoreline planting guide which was competed.
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**23a. Subaward Work Plan Component/Task:** 4 – OSS Workshops & Incentives

**23b. 2012 Action Agenda Near-Term Action(s) Supported:** C9.1: TMDLs

**\*23c. Estimated Costs:** \$39,497.00

**Actual Costs to Date:** \$34,472.62

**(If required to report – contact your Project Manager)**

23d. Sub-Task No.	23e. Sub-Task Description (include due date)	*23f. Date of Status	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks
a	<p>The RECIPIENT will conduct at least four septic system care workshops each year (minimum of eight total). Workshops will provide detailed information on the components of residential OSS, tips for working with OSS maintenance providers, and best practices for long-term care of OSS. The RECIPIENT will offer incentives to encourage workshop participation. Each household in attendance will qualify for either a \$100 rebate for a professional septic system inspection or up to a \$100 rebate on septic tank access riser installation (\$50 per riser). Workshop promotion, presentation and incentives will be coordinated with the Snohomish Health District, local OSS providers, and the RECIPIENT's Ecology-funded, Clean Water Loan and Grant program.</p> <p>Attendance for each workshop is estimated between 50-60 participants (approx 400 total individuals). Rebate</p>	9/30/2017	COMPLETED	<p>Attendance sheets for eight septic system care workshops (acceptable to blank out any information that could be perceived as personal as the purpose is to provide proof of attendance number) (due Sept 30, 2017)</p>	<p>In total 12, septic system workshops were held with 260 target lake participants from 195 households during the grant period. These workshops were, in part, funded by other programs and included other County residents so total attendance was 782 residents from 574 households.</p> <p>- Feb, 2015 -Two septic workshops were held - in total 125 people attended from 86 households.</p> <p>- July 2015 - An additional two septic workshop were held - 69 people from 52 households attended and attendance sheets were included with this report.</p> <p>- Nov 2015 - one workshop was held 29 people from 21</p>

	requests for subsequent inspections and/or riser installation are estimated to be from 300-350 participants. In addition, increased knowledge of septic systems is expected to result in improved septic system care by 400 - 500 septic system owners through more regular maintenance and timely repair. Access to low interest septic repair/replacement loans is expected to help address the cost barrier to implementation. LakeWise pilot project experience indicates that many workshop attendees will also request LakeWise visits and adopt some or all of the Clear Choices Checklist BMPs.				<p>households attended (another was scheduled but was cancelled due to low registration in targeted geographic area)</p> <p>Starting in 2016, workshops have been held jointly with the County's Savvy Septic program with much larger attendance numbers overall, but for lake households:</p> <ul style="list-style-type: none"> <li>- July 2016 two workshops were held with 38 people from 32 households in the target watersheds</li> <li>- Nov 2016 - two workshops were held with 28 people from 21 target lake households (total attendance 141 people from 98 households total)</li> <li>- Feb 2017 one workshop was held with 7 people from 5 target lake households (total attendance 83 people from 60 households)</li> <li>- July 2017 two workshops with 11 people from 9 target lake households (total attendance 117 people from 82 households)</li> </ul>
b	" "	9/30/2017	COMPLETED	OSS Rebates for up to 300-350 households. (due March 31, 2017)	<p>Rebate guidelines and application forms were completed. In addition, the internal rebate payment process was finalized with the County finance department. In total, 64 rebates were issued to 46 target households.</p>

**23a. Subaward Work Plan Component/Task:** 5 – Runoff Management Assistance

**23b. 2012 Action Agenda Near-Term Action(s) Supported:** C9.1: TMDLs

**\*23c. Estimated Costs:** \$12,486.00

**Actual Costs to Date:** \$9,595.20

**(If required to report – contact your Project Manager)**

23d. Sub-Task No.	23e. Sub-Task Description (include due date)	*23f. Date of Status	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks
a	<p>The RECIPIENT will develop a Landowner Infiltration Guide that illustrates options for slowing and infiltrating stormwater runoff from roofs, driveways, and other impervious surfaces that currently drain directly into a lake or tributary streams or ditches. Example BMPs may include dry wells, infiltration trenches, splash blocks, and cross driveway slotted drains or berms. RECIPIENT drainage experts will identify affordable, feasible options and prepare installation descriptions and illustrations that are understandable for homeowners. Existing publications will be adapted for this region, with author permission. Guides will be distributed at site visits and LakeWise events, and will be made available electronically on the LakeWise webpage.</p> <p>The RECIPIENT will also provide incentives for up to 40 landowners who implement pre-approved stormwater redirection and infiltration projects. Qualification will be restricted to sites having runoff piped or otherwise directly outflowing to a lake, stream, or ditch. A RECIPIENT drainage expert will inspect the site and prepare a customized recommendation. Following implementation and inspection, the landowner will receive a rebate of up to \$200 for documented allowable costs. This incentive program will serve as a pilot for managing runoff through other County programs and in other waterbody settings.</p>	3/31/2017	COMPLETED	Landowner's Guide for infiltrating polluted runoff. (due March 31, 2017)	<ul style="list-style-type: none"><li>- A thorough search of existing materials in the region/country was conducted. The project team decided to adapt Santa Cruz's Slow it, Sink it, Spread it publication for the Northwest region and obtained permission accordingly.</li><li>- Meetings were held with County drainage experts to develop materials relevant to this region with appropriate permitting and guidelines.</li><li>- Draft copy was completed</li><li>- Images were identified and permissions were obtained</li><li>- The graphic designer updated the graphics and laid the copy</li><li>- The guide was reviewed and finalized.</li><li>- The guide is complete but cannot yet be published as it is still under review by the County's permitting department. The expected review completion date is Dec, 2017.</li></ul>



b	" "	9/30/2016	CANCELLED	Rebates for up to 40 property owners to infiltrate polluted runoff that would otherwise flow into target lakes either directly or via inlet ditches or streams. (due March 31, 2017)	This portion of the grant is in the process of being cancelled due to local permitting requirements for infiltration trenches and other infiltration options.
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### CHALLENGES AND SOLUTIONS (specific to reporting period)

*24a. Task No., Sub-Task No.	*24b. Challenge	*24c. Solution
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### HIGHLIGHTS/LESSONS LEARNED/REFLECTIONS

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The most important success of the grant thus far is the high interest and excitement generated in the lake communities through the grant outreach and workshop activities. So far in the 11 target lakes with an estimated 3,211 households - 302 have participated in LakeWise (attended a lawn or septic care workshop and/or had a site visit); 127 have had site visits (85 since grant started) of which 54 are fully certified implementing (meaning they have implemented 9 BMPS to reduce phosphorus), with the remaining implementing most of the BMPS and are still working to complete all. Shoreline landowners have especially been active. Of the 737 shoreline landowners only, 183 have participated, 97 have had site visits (some before the grant start), 41 are certified, and 27 are conducting shoreline restoration. By attending the septic and lawn workshops and working towards certifications, landowners are helping meet the grant goals of reducing nutrients to our aquatic systems (certification requires septic system inspections, committing to pick up pet waste, attending natural lawn care and septic workshops, re-routing runoff from being piped into lakes/streams, avoiding fertilizers etc. While the grant is only covering the costs of the septic care workshops and outreach mailers, it is enhancing the participation of the site visits and natural lawn care workshop funded by the County.

The other major grant activity has been the shoreline restoration program. Twenty seven projects are in process or complete. When completed these projects will help restore 2,200 linear feet of shoreline. While the County has significant experience with stream and river restoration, we have less experience with lake shoreline restoration. We are not currently accepting new projects although we will still be offering a plant only restoration option for landowners through May 31<sup>st</sup>. The focus of the next two quarters will be completing the runoff infiltration guide, completing the last septic workshop, advertising the septic care rebates, wrapping up the shoreline planting projects, conducting a program evaluation, and finishing a shoreline planting guide.



